We claim:

1. A peptide exhibiting an activity profile greater than 15.0 $\mu A/cm^2$ when said peptide contacts a cell monolayer at a concentration of at least about 500 μM, and said activity is determined by measuring transepithelial electrical resistance of the cell monolayer using the method of Example 1.

2. The peptide of claim 1, said peptide being a derivative of SEQ ID No. 1.

3. The peptide of claim 1, said peptide having at least about 35% sequence homology with a peptide selected from the group consisting of SEQ ID Nos. 2 and 3.

4. The peptide of claim 1, said peptide being soluble to a level of at least about 5 mM.

5. The peptide of claim 2, said peptide being modified to include at least one polar amino acid at the C- or N-terminus thereof.

6. The peptide of claim 5, said polar amino acid comprising lysine.

7. The peptide of claim 1, said peptide having at least about 35% sequence homology with a peptide selected from the group consisting of SEQ ID Nos. 4, 9, 10, 13, 14, 18, 19, 21, 26-28, and 32-34.

8. The peptide of claim 1, said peptide comprising from about 16-31 amino acid residues.

9. The peptide of claim 1, said peptide exhibiting an activity profile of at least about 15.0 $\mu A/cm^2$ when said peptide contacts the cell monolayer at a concentration of at least about 300 μM.

10. The peptide of claim 9, said peptide exhibiting an activity profile of at least about 15.0 $\mu A/cm^2$ when said peptide contacts the cell monolayer at a concentration of at least about 200 μM.

11. The peptide of claim 10, said peptide exhibiting an activity profile of at least about 15.0 $\mu A/cm^2$ when said peptide contacts the cell monolayer at a concentration of at least about 100 μM.

12. A purified and isolated first peptide having at least about 35% sequence homology with a second peptide selected from the group consisting of SEQ ID Nos. 4-47.

13. The first peptide of claim 12, said first peptide having at least about 50% sequence homology with said second peptide.

14. The first peptide of claim 13, said first peptide having at least about 65% sequence homology with said second peptide.

15. The second peptide of claim 12, said second peptide being selected from the group consisting of SEQ ID Nos. 4, 9, 10, 13, 14, 18, 19, 21, 26-28, and 32-34.

16. The first peptide of claim 12, said first peptide being soluble to a level of at least about 5 mM.

17. The first peptide of claim 16, said first peptide being soluble to a level of at least about 10 mM.

Sub A1 18. A method of decreasing resistivity of a cell layer comprising the step of contacting said cell layer with a peptide, said peptide being a derivative of SEQ ID No. 1, and said derivative including at least one portion which is palindromic to a portion of SEQ ID No. 1.

19. The method of claim 18, said cell layer comprising MDCK cells.

Sub A2 20. The method of claim 18, said palindromic portion comprising at least about 7 amino acid residues.

21. The method of claim 20, said palindromic portion comprising at least about 9 amino acid residues.

22. The method of claim 21, said palindromic portion comprising at least about 11 amino acid residues.

23. The method of claim 18, said peptide being modified to contain a plurality of polar amino acid residues at the C-terminus, the N-terminus, or the C- and N-terminus of said peptide.

24. The method of claim 23, said polar amino acid residues comprising lysine.

25. The method of claim 18, said peptide being present at a concentration of at least about 500 μM.

26. The method of claim 25, said peptide being present at a concentration of at least about 300 μM.

27. The method of claim 18, said derivative having at least about 35% sequence homology with a peptide sequence selected from the group consisting of SEQ ID Nos. 4-47.

28. The method of claim 18, said peptide having at least about 50% helical content.

29. The method of claim 18, said peptide being substantially monomeric in solution.

30. A method of altering the flux of water across an epithelial cell presenting first and second spaced apart surfaces, said method comprising the steps of:

a. providing a peptide capable of forming a channel assembly for transport of anions through said epithelial cell, each of said peptides having at least about 35% sequence homology with a peptide selected from the group consisting of SEQ ID Nos. 4-47; and

b. contacting said peptide with said first surface of said epithelial cell, and causing said peptide to alter the flux of water across said cell surface.

31. The method of claim 30, said peptide having at least about 50% sequence homology with a peptide selected from the group consisting of SEQ ID Nos. 4-47.

32. The method of claim 31, said peptide having at least about 65% sequence homology with a peptide selected from the group consisting of SEQ ID Nos. 4-47.

33. The method of claim 30, said peptide being substantially monomeric in solution.

34. The method of claim 30, said peptide being soluble to a level of at least about 5 mM.

35. The method of claim 34, said peptide being soluble to a level of at least about 10 mM.

36. The method of claim 30, said peptide having at least about 50% helical content.

37. A method of killing undesirable cells comprising the steps of:

a. contacting said cell with a peptide, said peptide comprising from about 16-31 amino acid residues and said peptide being a derivative of the M2GlyR peptide; and

b. causing channels of said cell to open and thereby causing the death of said cell.

38. The method of claim 37, said peptide having at least about 35% sequence homology with SEQ ID No. 2.

39. The method of claim 38, said peptide having at least about 50% sequence homology with SEQ ID No. 2.

40. The method of claim 39, said peptide having at least about 65% sequence homology with SEQ ID No. 2.

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